

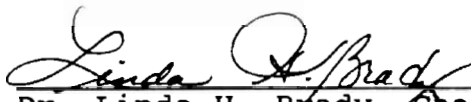
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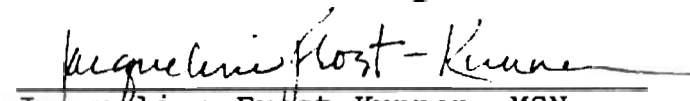
PARENTAL STATE ANXIETY AS A FUNCTION OF THE  
VISITATION SCHEDULE OF PEDIATRIC INTENSIVE CARE UNITS

by

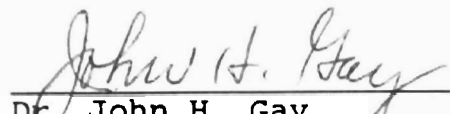
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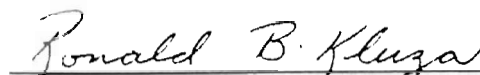
Approved by Committee:

  
Dr. Linda H. Brady, Chairperson

  
Jacqueline Frost-Kunnen, MSN

  
Shirley R. Beaver, MN

  
Dr. John H. Gay

  
Dr. Ronald B. Kluza  
Dean of the College of Pharmacy and Health Sciences.

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## Abstract

This study investigated the state anxiety level of the parent whose child had been admitted to the Pediatric Intensive Care Unit (PICU) with restricted visiting hours and the state anxiety level of the parent whose child had been admitted to the Pediatric Intensive Care Unit with unrestricted visiting hours.

The 15 parents in each of the two visitation groups were very similar in terms of age, gender, and marital status.

Parental state anxiety levels were measured using the Spielberger State-Trait Anxiety Inventory (STAI). A tool evaluating visiting hours and the STAI were given to the parent of the child hospitalized in the Pediatric ICU between the 12th and 36th hour of hospitalization.

While no significance was found at  $p < .05$  level, implications for further research are discussed.

## CHAPTER I

### INTRODUCTION

Children are very important in the lives of parents. When a child becomes ill, especially when the child becomes critically ill, the parent experiences great stress. While any condition that threatens the child's body integrity or psychosocial adjustment may justify parental concern, a threat to a child's life places a serious strain on the parents and their role (Quinton and Rutter, 1976).

Adults who are seriously ill are usually admitted to an intensive care unit. Children who are seriously ill are usually admitted to a pediatric intensive/intermediate care unit (PICU). In these units the child's condition is monitored closely and treated quickly. Parents generally recognize that the admission of their child to one of these units will provide the quality of care needed for recovery, but admission to a PICU is an anxiety-producing experience. Parents are seldom called upon to provide direct care for a seriously ill child in a PICU. The parental role is altered. Parents, as well as the child, find the child's admission to the hospital to be a source of stress.

The child and his or her family are frequently overwhelmed by the seriousness of the illness requiring hospitalization and admission to the PICU. The admission is

usually sudden, and the illness may be life-threatening. Treatment procedures are frequently rapid, intense, and often invasive. The outcome of the admission may not be known for a long period of time. The gravity of the situation is compounded by sights, sounds, smells, and the unfamiliar professional staff of the PICU. Monitors, buzzers, beeps, and other stimuli combine to create a level of emotional distress that parents find very difficult to cope with.

The parents usually accompany the child when he/she is admitted to the PICU. When the child reaches the unit, staff members attend to the child in an effort to stabilize the acute status of the child. As a result, parents may perceive that they are ignored and forgotten. Parents may be left standing in the corridor unable to see their child for an unknown period of time. Doors to rooms in the PICU are usually closed, and curtains are drawn. Parents are separated from their child. All the involved family members may be under great stress.

The illness of the child affects family function and structure. The family is a dynamic entity with a life structure of its own. Families are highly organized, with homeostatic mechanisms for the purpose of maintaining stability. The child's illness precipitates crisis, throwing the highly organized family system into

disorganization. The family roles must change in order to meet the crisis, and the family needs to reorganize to regain equilibrium (Olsen, 1970).

The way in which the family reorganizes may dramatically affect the adjustment of the sick child and the outcome of the sick child's illness. One of the major goals in the management of acute illness in the child is to re-establish the parental relationship and the parental role (Miles, 1979). Family members need to be in contact with the child to feel they are giving him or her support and care.

A growing body of research demonstrates the importance of meeting the emotional and developmental needs of children during hospitalization (Bellack, 1985; Blom, 1957; Green, 1983; Hansen, 1986; Hardgrove, 1984; Keane, 1986). Increasing attention is being focused on the entire family rather than just the hospitalized child. This holistic approach to medicine views the family as a single entity with multiple facets. When one member becomes ill, the entire entity is altered. In order for nurses to assist these distressed families in the PICU, various nursing interventions have been suggested (Brandt, 1984; Jillings, 1981; Lust, 1984). Virtually every intervention includes involvement of the parent in the care of the ill child. As parents become involved in the care of their child, it is

believed their feelings of anxiety will decrease, and the child's anxiety will decrease.

With increased parental participation in the care of their child, Lust (1984) contends there will be a need to increase flexibility of visiting hours. Visiting restrictions are generally imposed upon the families of critically ill children. Parents are allowed to visit for short periods, usually 5 to 10 minutes each hour, and siblings are not allowed visitation privileges at all. These anxious and tense parents communicate a kind of strained feeling to the child (Lybarger, 1979) altering the normal parent-child relationship.

Holistic family-centered medicine embraces the notion of unrestricted visitation. Greater parent-child contact allows increased opportunities for parent-child interaction, thus decreasing parental stress. At the same time, the hospitalized child's anxiety is decreased. The family's need to be involved in the care of the child is satisfied. Nursing staff and families may thus work together toward the common goal of making the hospitalized child less anxious and more comfortable, thereby facilitating recovery. Children of all ages derive their chief emotional support from their families, and unrestricted visitation may help to reassure the hospitalized child that he or she has not been abandoned by the parents.

How an acute episode of illness affects the child and his or her family has been well documented in the literature (Etzler, 1984). There is little research, however, on the effect of limited versus unlimited interaction between the child in the critical care unit and the family. The emotional reactions of children and families to hospitalization and illness have been studied (Prugh, Staub, Sands, Kirschbaum, & Lenihan, 1953). All children showed some observable reaction to the hospitalization experience. Many children exhibited reactions requiring special and strenuous modes of adaptation. These adaptive coping mechanisms were usually self-limited but persisted for weeks or months after discharge. Preschool-aged children separated from their parents exhibited more severe reactions. Although the emotional effects of hospitalization would seem inevitable, the use of more frequent visiting was suggested as one preventative measure (Prugh et al., 1953).

Restricted visiting hours were originally developed to promote rest for the critically ill patient. Sleep deprivation has been associated with "Intensive Care Unit Syndrome" in adults (Helton, 1980). It is reasonable to assume children may also exhibit altered behavior as a result of sleep deprivation (Stevens, 1981). There is little evidence, however, that limiting the parents'

visiting times will promote rest for the critically ill child. On the contrary, separation from the family may be the major stressor for the child because of the dependency of children on their parents. **Liberalizing parental** visiting privileges may help to improve the PICU experience for the parent and child. Incorporating the parent into the care team may decrease the child's separation anxiety and reduce stress. The child's needs will be met, and the parents will acquire a sense of contributing to the child's care. By investigating alternative visiting patterns, this researcher believes nursing may provide evidence of a way to decrease anxiety/stress in the parents of the child admitted to the PICU.

The purpose of this study was to compare the anxiety/stress level of parents in a restricted visitation PICU with the anxiety/stress level of parents in an unrestricted visitation PICU. The studied population was the parents of any child admitted to the PICU.

## Problem Statement

Is there a difference between the state anxiety level of the parent whose child has been admitted to the PICU with restricted visiting hours and the parent whose child has been admitted to the PICU with unrestricted visiting hours?

## Theoretical Definitions

For purposes of this study, the following are offered as theoretical definitions:

**State Anxiety:** "A transitory emotional state or condition of the human organism that varies in intensity and fluctuates over time. This condition is characterized by subjective, consciously perceived feelings of tension and apprehension, and activation of the autonomic nervous system" (Spielberger, 1972, p. 39).

**Trait Anxiety:** "Refers to relatively stable individual differences in anxiety-proneness, that is, a difference in the disposition to perceive a wide range of stimulus situations as dangerous or threatening, and in the tendency to respond to such threats with A-State reactions" (Spielberger, 1972, p. 39).



Anxiety: For the purposes of this study, anxiety is synonymous to stress. Theoretically, the concept of anxiety can also be divided or rendered into two components: state anxiety and trait anxiety.

Pediatric Intermediate Care Unit: Specialized hospital department providing complete nursing care for the critically ill child.

Pediatric Intensive Care Unit: Specialized hospital department providing complete nursing care for the critically ill child.

Family: Includes mother, father, and any siblings of the hospitalized child. Includes legal guardians of the child.

Restricted Visitation: A limited amount of time a family member is allowed to spend with the hospitalized child; for example, five minutes every hour.

Unrestricted Visitation: Unlimited time, 24 hours a day, spent with a hospitalized child by family members.

## Operational Definitions

For the purposes of this study, the following are offered as operational definitions:

**State Anxiety:** State anxiety is measured by the Spielberger State-Trait Anxiety test, form Y-1.

**Trait Anxiety:** Trait anxiety is measured by the Spielberger State-Trait Anxiety test, form Y-2.

## Limitations

1. One pediatric intensive care unit and one pediatric intermediate care unit were studied. This may have been limiting because each unit had a different nursing staff, located in different institutions. Any difference found may be due to different nursing staffs or different environments.
2. The sample was a convenience nonprobability sample rather than a random probability sample. This may have biased the study because parents self-select themselves as consumers of a certain hospital. Generalization of the findings of this study is

limited to the two hospitals studied.

#### Null Hypothesis

When the trait anxiety level is the covariate, there will be no difference between the state anxiety level of the parent whose child has been admitted to the PICU with restricted visiting hours and the state anxiety level of the parent whose child has been admitted to the PICU with unrestricted visiting hours.

## CHAPTER II

### REVIEW OF THE LITERATURE

In the following chapter, literature reviewed is related to the areas of family systems theory (Olsen, 1970) and anxiety. The review will begin with an explanation of family systems theory and a discussion of the effects of a child's illness on the family system and the family homeostasis. The stressful/anxious effects of a hospitalized child on a parent will be examined, as well as the stressful/anxious effects of separation on the hospitalized child. The restrictive environment of the PICU will be examined, as well as the restrictive visitation policies usually experienced in the PICU. Finally, the literature reviewing unrestricted visitation policies, both in the intensive care unit (ICU) atmosphere and on the ward, will be presented.

#### Family Systems Theory

The family as a unit is complicated and complex. There are certain characteristics which typify all families and which should be considered when approaching the family in health care. The family is a system in which the whole is greater than the sum of its parts. The family, as Bursten

(1965) has emphasized, is a dynamic entity with a life structure and institution of its own. Families are highly organized and have developed mechanisms for the maintenance of stability. At the same time, the family has provided satisfaction for the emotional and physical needs of its members (Olsen, 1970).

External forces influence and affect the family organization system. Technological change, shifts in cultural mores, and personal or individual moral values may come in conflict with the family's norms and values. Internal forces also influence and affect the family organization. Growth and change in family members expose individual roles and family rules to continual change. Change temporarily disrupts the family's equilibrium, and it may be difficult for the family to return to homeostasis (Olsen, 1970). Family rules and roles may not be sufficient to maintain organization when a child is ill and hospitalized. Family members may have a difficult time maintaining equilibrium when a child may be in danger of dying, or when the child is unable to function in the usual capacity, or when new demands are made on the family as a result of the illness (Gofman, 1957).

The family in disequilibrium needs to reorganize in order to continue to exist as a family. The family will push toward a new homeostasis which will be tolerable to the

family as a unit. A large burden is placed on parents to lead the family effectively toward a new homeostasis. Once the family reorganizes, they may function as well as, or even better than, they did before the crisis. In the process of reorganization, family roles and rules may change, and the result can be serious emotional pain or impaired functional ability in all family members. The child and the outcome of his or her illness may be dramatically affected by the way in which the family reorganizes (Miles, 1979).

### Anxiety

Parental stress/anxiety associated with the hospitalization of the child may be instrumental in the full recovery of the child, and in the reorganization of the family structure. While many investigators have examined the concept of anxiety from a variety of conceptual approaches, for the purposes of this study anxiety/stress was approached from a state anxiety/trait anxiety framework.

The concepts of state and trait anxiety were first introduced by Cattell and Schier (1961). They distinguished between what they termed realistic-situational anxiety and characterological anxiety.

Realistic-situational anxiety was defined as "response

to real-situational threats and comes and goes with them" (p. 14-15). This emotional state exists at a particular level of intensity. These emotional states are characterized by subjective feelings of tension, apprehension and by activation of the autonomic nervous system. Cattell and Schier (1961) stated situational anxiety should be related to stimuli, and could be distinguished from other anxiety forms by its ability to change with the situation. Danger signals in the environment, such as a child's illness, produce situational anxiety. When the child is returned to the home, the anxiety decreases and the situational anxiety is eliminated. In defining characterological anxiety, Cattell and Schier (1961) stated that it dealt with processes internal to the individual and usually was not related to immediate changes in the environment.

Personality traits can be conceptualized as relatively enduring differences among people. Individuals tend to perceive the world in a certain way and react or behave in a specific manner with predictable regularity as a result of their personalities. Internal contributions to characterological anxiety included temperament, which causes different reactions to the same situation, and differences in aspiration levels. As a result, the same situation may threaten more loss. They reported that characterological

anxiety could be traced to a remote and possibly long-embedded external experience. The individual was now reacting to danger signals he or she had known previously rather than reappraise the current situation.

Following the terminology of Cattell and Scheier, Spielberger (1972) proposed two anxiety constructs. He defined anxiety states as characterized by consciously subjective perceived feelings, or A-State. He defined anxiety traits as relatively stable, individual differences in anxiety-proneness, or A-Trait.

The two anxiety constructs were defined by Spielberger (1972) as follows:

State anxiety (A-State) may be conceptualized as "a transitory emotional state or condition of the human organism that varies in intensity and fluctuated over time. This condition is characterized by subjective consciously perceived feelings of tension and apprehension, and activation of the autonomic nervous system" (p. 39).

Trait anxiety (A-Trait) refers to "relatively stable individual differences in anxiety proneness, that is, to differences to perceive a wide range of stimulus situations as dangerous or



threatening, and in the tendency to respond to such threats with A-State reactions" (p. 39).

Spielberger's (1972) State-Trait Anxiety Inventory (STAI) measures these anxiety concepts and is based upon the distinction between them. Spielberger (1972) emphasized that differences in anxiety levels among individuals may be due to their previous experiences in dealing with similar stimuli. The strength and duration of external and internal stimuli help to determine both the intensity and persistence of anxiety states.

High A-Trait people are more likely to perceive the environment as more threatening than do low A-Trait people. Over a period of time, high A-Trait individuals are more vulnerable to stress and experience greater intensity reactions to perceived dangers in the environment than low A-Trait individuals.

Numerous studies have supported the theoretical distinction between state and trait anxiety. Johnson (1968) measured the state and trait anxiety levels of 48 male psychiatric patients of a hospital before and after a stressful or a nonstressful interview. A relaxation period involved tensing and relaxing muscle groups and thinking quiet thoughts. Subjects then were randomly assigned to the stress or nonstress interview groups. The stress interview

consisted of having the subjects recall experiences that had been traumatic for them. The nonstress interview involved discussions of favorite hobbies, etc. Johnson (1968) determined that the three measures of state anxiety used in this particular study, including the Zuckerman Affect Adjective Check List (AACL) (1960), systolic blood pressure, and heart rate, all increased in subjects who experienced the stress interview. Subjects in the nonstress interview exhibited no change in the AACL, systolic blood pressure, or heart rate. Measures of trait anxiety were unaffected by the stress or nonstress interviews. State and trait anxiety were found to be separate, but related, entities.

Theoretically, state versus trait anxiety are two distinct and measurable concepts. Spielberger (1972) considered the end result of the process of anxiety to be behavior. Behavioral responses include such feelings as worry, nervousness, tension, and regret. Behavioral responses vary according to each individual's state anxiety. The psychological and behavioral responses outlined by Spielberger (1972) could result in serious disruptions in the family system. The reactive anxiety produced by parental stress and separation from the hospitalized child has characteristics attributed to the concept of state anxiety, in that it is a response to a real-situational threat, is transitory, and is proportional to the perceived

danger.

May (1977) defined anxiety as "the apprehension cued off by a threat to some value that the individual holds essential to his existence as a personality" (p. 205). Spielberger (1972) believed anxiety to be a "specific emotional state" (p. 45). Trait anxiety was described as "an acquired behavioral disposition that predisposes an individual to perceive a wide range of objectively nondangerous circumstances as threatening and to respond to them with anxiety state reactions disproportionate in intensity to the magnitude of the objective danger" (p. 17). Presumably, individuals for whom anxiety traits were a prominent personality characteristic would also manifest anxiety states more frequently. While there is still lack of consensus regarding the conceptual meaning of anxiety, progress has been made in the measurement of anxiety as a state and anxiety as a trait.

The stressful effects of hospitalization on children and their families have been well documented. In 1984 Etzler compiled a review of the literature identifying parents' reactions to pediatric critical care settings and interventions to facilitate parental adaptation. Descriptive studies and a few empirical studies from 1953 to 1983 were included. Parental behaviors and specific parental stressors were identified. One intervention in

particular was mentioned several times, that of unlimited parental visitation. Although few interventions mentioned were supported with empirical findings, the recommended interventions were consistent in nature.

### Parental Reactions

Many authors have studied and identified parental reaction to the hospitalization of their child on both the pediatric ward and in the critical care setting. In 1977 Jay discussed her experiences and observations of parents during the crisis of their child's admission to one intensive care unit (ICU). She found parents to be immobile and unable to reach out to their child. Parents were lacking in knowledge about their rights. They were frequently confused about the change in their parenting role and concerned about separation from their child.

Miles (1979) described stressors that parents may experience when their child is admitted to the PICU. First and foremost was fear about the outcome of the admission. Parents were anxious about the environment of the PICU, and they were concerned about their changing parental role.

Knox and Hayes (1983) studied hospital-related stress in parents of chronically ill children. By interviewing 41 parents and legal guardians, the parental perception of

stress and methods the nurse could use to alleviate that stress were addressed. A major component of parent stress was the adaptation required in the parenting role. The researchers determined that parents needed support and adequate information in order to ease into the hospital parent role. Since parents were not able to care for their hospitalized child as they normally would, adaptation was required in the parenting role. **Parents were often unable** to visit their hospitalized child, the environment of the hospital was different, and adaptation of the parenting role was needed in both of these areas. The authors suggested parental adaptation would be facilitated by utilizing nursing interventions of offering increased support for the parents and providing adequate information to parents.

Gofman (1957) also described parents' emotional response to their child's hospitalization for an acute condition. One hundred parents were interviewed at the time of their child's admission to the hospital. Of the parents interviewed, all expressed anxiety regarding separation from their child. Fifty-seven percent of those interviewed stated the anxiety was overwhelming.

Miles and Carter (1982), in a study of sources of parental stress in pediatric intensive care units, concurred. Miles and Carter (1982) utilized an inductive approach to identify sources of stress experienced by

parents when their child is admitted to the pediatric intensive care unit. Seventy-nine items defining eight dimensions of pediatric intensive care stressors were identified using a review of the literature, clinical observations, and interview of parents of children recently discharged from a pediatric intensive care unit. One of the eight dimensions of PICU stressors was labeled parental role deprivation. This dimension included aspects of the parental role which parents felt they were unable to perform as a direct result of their child's admission to the pediatric intensive care unit. Parents included such stressors as being separated from their child for long periods of time, not being able to hold their child, not being able to visit or see their child, being afraid to touch their child, and not knowing how to protect their child during this crisis.

Fiser, Stanford, and Dorman (1984) interviewed the parents of 22 children discharged or transferred from a PICU during an eight-week period. The purpose of the interview was to determine how well parental needs were met while in the PICU. The authors identified the services that parents in a PICU found helpful in decreasing anxiety. Several interventions were found to have a very high degree of parental satisfaction. One of these interventions was the hospital's 24-hour visitation policy.

Freiberg (1972) asked 25 mothers to discuss their child's hospitalization experience. The mothers were asked to include the effects of the hospitalization experience on the child and family, not only for the duration of hospitalization but also for the first few days after discharge. While the sample size was small, the parental reactions of the mothers had a common theme. Parental reactions to the hospitalization were laced with fear and anxiety. Specific incidents mentioned by 18 of the 25 parents included being separated from their child during a procedure and merely seeing their child in the intensive care unit.

Rothstein (1980) studied the emotional reactions of parents while their children were hospitalized in a PICU. He discovered all parents initially experienced a period of overwhelming shock and disbelief. This was usually followed by feelings of helplessness and guilt. The shock was usually intensified when the child's condition was unstable. As the child stabilized, the shock merged into a period of "anticipatory waiting" (p. 614). At this time parents became concerned about the long-term effects of the illness. Predominant emotions included anger, guilt, and a feeling of helplessness. Elation or mourning then followed the period of anticipatory waiting dependent upon the child's outcome--either discharge or death. Braulin, Rook, and

Sills (1982) studied the impact of trauma on families in crisis and concluded that an ongoing interaction between the family and the patient can be effective in reducing the feelings of hopelessness and helplessness. "Frequently, family members spend much of their time in a family waiting area where they are separated from their injured relative" (p. 39). By encouraging family members to visit the hospitalized child, the nursing staff can encourage the family to communicate with the injured family member (their child) through the use of touch, etc.

Lewandowski (1980) observed and interviewed 59 parents of children who were in an intensive care unit following open-heart surgery. He developed a list of 43 parameters important in the assessment of stress levels of these parents. Sources of stress included the hospital and the intensive care environment. Stressful environmental stimuli included sights and sounds of the unit, the sight of their child attached to machinery and tubes, and the sight of their child frequently naked. Immediate family members were allowed to visit at any time of the day or night for as long as they wished. Separation anxiety was not pointed out as a major source of parental stress.

Focusing on the needs and stresses of parents is important. The parent of the ill child has a critical role in offering the sick child support and stability in his time



of crisis (Jay, 1977; Lybarger, 1979; Miles, 1979). It has been shown that if the needs of the family are not met, parents may not be able to provide adequate support to their child. It has even been hypothesized that parental anxiety may be transferred to the sick child causing a delay in recovery (Wolfer & Visintainer, 1975).

### Child's Reactions

Just as hospitalization of the child produces stressors for the parents, hospitalization is also stressful for the child (Hardgrove, 1972). A number of stressors are predictable for the child in the PICU. These stressors include the child's illness, sleep deprivation, lack of a familiar setting and routine for the child, imposed separation from the child's family, the degree and type of stimulation, and the therapeutic and diagnostic procedures performed. These stressors usually exist in varying combinations (DeMeyer, 1967). By reducing some of the child's stressors, the child may divert energy toward coping with the physical stressors of illness.

The nature and severity of the child's illness are usually of prime concern to the parents. The child and family must cope with the foreign environment of the PICU. The situation is threatening for the entire family and

inescapable for the child. The child's perception has likely been altered, and his or her level of consciousness may be distorted. Physiologic alterations such as hypoxia or reactions to medications may compound the child's confusion. To make matters even worse, children may perceive illness as punishment for wrongdoing. The PICU environment, with the machinery and the unfamiliar personnel, leaves the child to fantasize. Why are Mom and Dad doing this to me? What did I do? (Stevens, 1981). The parents are there sporadically, and the child may feel abandoned. The fear of abandonment may potentiate the child's fears and fantasies, and his or her anxiety may increase (Frankl, Shiere, & Fogels, 1962). If parents are available to the child, some of the child's fantasies may be eliminated and his or her anxiety may decrease.

Prugh et al. (1953) studied 200 hospitalized children. All children showed some observable reaction to the experience of hospitalization as separate from the effect of the illness itself. Separation from the parents appeared to play a major role. Three months following hospitalization, more than 50 percent of the children under the age of 6 exhibited significant disturbances in behavior that were not present prior to hospitalization.

Blom (1957) studied an 11 year-old boy with cirrhosis of the liver. The child was told he would be hospitalized

for 6 weeks. Psychological tests were given to the child and his reactions noted. The child was noted to respond positively to his parents' visits. It was concluded the boy's adequate adjustment to the stress of hospitalization and illness was related to the parent-child relationship and visitation.

Skipper and Leonard (1968) studied children, stress, and hospitalization. A total of 80 patients, aged 3 to 9, were admitted to the hospital for the first time. The children were divided into two groups, one experimental group and one control group. The experimental group had a special nurse creating an atmosphere of freedom of communication between the mother and the nurse. Mothers were told the routines to expect and when they were likely to occur. The control group experienced the hospital environment without the special communication between the mother and nurse. The control group confirmed the hypothesis that the social environment of the hospital is likely to produce a great amount of stress for the child patients and their mothers. The experimental group data indicated that a change in the quality of interaction between a nurse and the hospitalized child's mother may significantly reduce the mother's level of stress. The mother's intimate relationship and interaction with the child in turn reduced the level of stress for the child and

consequently altered his social, psychological, and physiological behavior. Supporting the parents, therefore, through unlimited visitation and open communication significantly reduced the child's level of stress and allowed him or her to divert his or her energies to the process of getting well (Skipper & Leonard, 1968).

The PICU environment sometimes leaves little opportunity for the child to sleep. The child's physical need for frequent monitoring and procedures usually leads to some kind of sleep deprivation. The "ICU Syndrome" has been well documented for adults since the early 1960s (Helton, 1980). Associated with admission to an intensive care unit, previously lucid adult individuals display alterations in mental status. These symptoms initially appear as slurred speech, irritability, and disorientation and rapidly progress to psychotic behavior, which may include delusions and paranoia. One etiologic factor often associated with this syndrome is sleep deprivation. It is reasonable to assume that children can also exhibit the same behavior as a result of sleep deprivation. Experimental sleep studies by Lybarger (1979) indicated that one sleep cycle takes from 60 to 90 minutes, and that a complete sleep cycle is needed in order for benefit to be derived from sleep. The healthy child requires from 20 hours of sleep for a neonate to 7 or 8 hours of sleep for an adolescent (Lybarger, 1979). It is

logical to assume the younger the child, the greater the amount of sleep deprivation, since the younger the child, the greater the need for sleep.

Helton, Gordon, and Nunnery (1980) studied the correlation between sleep deprivation and the ICU Syndrome. Studying 62 patients aged 16 to 70 on their first three days in the ICU, the investigators concluded over one half of the subjects were sleep-deprived after the first day in the ICU atmosphere. It is logical to assume the children in the PICU are also sleep-deprived. Measures must be taken in the PICU to control the environment so the child has adequate opportunity to complete sleep cycles. **Decreasing unit** activity, decreasing the anxiety of the child, and limiting interventions may serve to facilitate uninterrupted sleep for the child.

DeMeyer (1967) interviewed 24 adult patients who had spent at least 48 hours in an ICU following cardiac surgery. A number of patients felt tied down with wires, tubes, and leads. Most patients spoke of the noise and constant disturbance. They spoke of constant daylight, forcing them to lose all sense of time, and the fact that people frequently talked about them without including them in the conversation. They noted a general sense of urgency in the environment. DeMeyer (1967) concluded most of these patients were receiving physical overstimulation and

emotional deprivation. It is not unreasonable to assume the child in the PICU feels the same.

Orsuto and Corbo (1987) studied the frequency of caregiver approaches to children in the PICU. Using time-sampling observations, 3 hours of observation per child were recorded. Caregiver approaches involved both direct and indirect contacts. Registered nurses had more contacts with the child than any other caregiver. Direct contacts were usually intrusive in nature, while very few were comforting in nature. Implications for nursing practice included the area of provision of rest. The high number of intrusive contacts should be limited between sleep cycles to help promote rest for the critically ill child.

Separation from the family is a major stressor for the child because children of all ages depend on their parents as their main resource for coping. From infancy to adolescence, the need for parents continually decreases except in times of stress, such as during the time of hospitalization. No matter the age of the child, the need for a parent in times of stress remains great (Stevens, 1981).

Any child may demonstrate emotional regression when faced with hospitalization, especially in an ICU setting. A parent close by may promote a sense of comfort and security for the child. Parents should be encouraged to visit. The

parents are important because they provide the significant care in the child's life. Parents usually do the touching, stroking, rocking, feeding, and bathing of the child. They provide familiarity and an extension of the home. By having parents participate in the child's care, they feel a sense of usefulness, and they feel needed. Participation helps parents to redefine their parenting role and reminds them the child is still their responsibility. When parents are allowed to visit the child frequently, they are able to visit the child in a supportive way (Soupios, 1980).

The critically ill infant/child needs sensory experience of the appropriate amount and type. By providing the child with these experiences, the child may not feel increased anxiety. Normalizing and personalizing the child's immediate environment will promote the child's continued development (Bellack, 1985). Green (1983) concurs and states, "An important goal of PICU nurses is to facilitate the normalization of patient and family lives" (p. 43).

Menke (1981) sampled 50 school-aged children to determine their perception of stress in the hospital. The results of the study did not support the relationship between the stimuli children perceived as stressful in the hospital and their preparation for hospitalization. The study did, however, identify 42 different stressors in the

hospital, leading to the concept that the hospital is a stressful environment for children. The children who were in the hospital for a longer period of time had a tendency to perceive more stimuli as stressful. Children in the PICU will probably be hospitalized for a longer period of time than average because of the serious nature of their illness. As a result, more stimuli are probably perceived as stressful by the child.

The PICU has evolved to meet the needs of the critically ill child. The specialized, technical care given to the child usually meets the physical needs of the child. There is little doubt the hospitalized child is facing many stressors, including being separated from his or her family, the main source of coping mechanisms. The physical care of the child is complete only when the total needs of the family are met (Mitchell, 1976). The addition of psychosocial care to the care plan benefits the child's emotional and physical condition (Petrillo, 1972). A decrease in the parents' anxiety decreases the child's anxiety, decreases the child's psychosocial stressors, and enables the child to divert energy toward coping with the stress of the physical illness itself (Skipper & Leonard, 1968).



## Visitation Policies

A review of the literature revealed little research on the topic of visitation policies. In 1984 Kinney compiled a review of the research from 1972 to 1982 involving critical care units. Visitation policies were studied by only two investigators.

Kirchoff (1982) conducted a national survey on visiting policies for patients who had experienced myocardial infarctions. Scheduled visitation patterns were the most prevalent nationwide, with visits every two hours being the most common schedule. The importance and frequency of nursing actions in the care of myocardial patients were also surveyed. Nurses indicated they regularly imposed the visiting restrictions. Kirchoff (1982) believed that the reasons nurses imposed restrictive visiting hours was that nurses believed visitors interfered with nursing care and that visiting restrictions promoted rest.

Brown (1976) examined the effects of family/friend visits on blood pressure and heart rate of patients in coronary care units. She found an increase in both during family/friend visits and attributed these results to the short restricted visits imposed by the coronary care units. Results of the findings revealed that relatives were often dissatisfied with the short visiting periods and with the

fact they then had to wait 50 minutes to see their relative again. This visitation schedule placed a drain on the family members and contributed to the patient anxiety level, at least indirectly (Brown, 1976).

Foster and Fuller (1982) studied surgical intensive care patients. Blood pressure changes, changes in heart rate, and vocal stress were compared before, during, and after staff interactions and family/friend visits. While the investigators expected to find a difference between staff interactions and family/friend visits, there was no significant difference. The investigators felt there was no significant difference because of variations in visitation periods and populations.

Pearlmutter, Locke, Bourdon, Gaffey, and Tyrrell (1984) described that families may be perceived by the staff as "being in the way." As a result, families may be kept from the patient, causing the anxiety of the family members to rise and/or the patient's anxiety to rise.

Jacobs (1983) wrote about her frustrating experience with the waiting room. After her husband had open-heart surgery, families were restricted to four 10-minute visits in a 24-hour period. Families and friends frequently waited 3 to 4 hours to see the patient. Frequently a hospital employee would come out and announce cancellation of visiting hours because of crisis, etc.

Nurse Barring (1977) often felt the nurses' approach to the hospital's arbitrary visiting hours was "mindless." She felt that if a person wanted to see someone who was hospitalized, he or she should be able to do so.

Visitation policies for children followed those of the critical care units for many years. When hospitals were first built, they were slow to open their doors to children. Spence (1925) started the policy of admitting mothers with their hospitalized children to the general wards in England. The policy became more popular, and in 1967 the University of Kentucky established a care-by-parent unit in the department of pediatrics. Similar to a motel, each room was private with an appropriate-size bed for the child and a couch that made into a bed for the mother. This policy became more popular, and in 1986 a care-by-parent option was introduced into the general pediatric ward at the University Hospital of Wales. All parents involved in the system said that they and their children benefited from the scheme. Parents felt greater confidence about the care of their child and believed their child was happier and slept better than had the parent not been present. Spence (1925) believed there should be a special suite of rooms in which, when necessary, a mother might live with, nurse, and care for her own child. She was to do this under the supervision of the trained staff. The program was successful and this

policy became more general. In 1980 Hardgrove did a survey of those hospitals with live-in programs. More than 80 hospitals were surveyed throughout the United States. Results showed most hospitals provided beds, but few other services were provided. Only 6 percent had a place for parents to cook and 11 percent supplied meals at no additional cost to parents. Surprisingly, even though these hospitals had no visiting restrictions to parents, they restricted parents from offering such support during the most stressful times when the child's need for parental reassurance was greatest. For example, 89 percent did not allow parents to be with the child during induction of anesthesia, and 81 percent of the hospitals restricted parents from the recovery room.

While visitation is virtually unrestricted on children's wards and restricted in the ICU area, there seems to be a void when it comes to the PICU. No research was found on restricted or unrestricted visitation in the PICU.

Many authors have supported unrestricted visitation by the family. Based on the concept of holistic care by nurses, nursing interventions must include the needs of the family. Mishel (1983) developed the Parent Perception of Uncertainty Scale to measure a perceptual variable believed to influence the parent's response to the child's illness and hospitalization. Lack of information to the parents may

function as a constraint against judged seriousness. Restricted visitation may not provide the information necessary for the parents to judge accurately the seriousness of the child's illness.

Care by parents in the hospital situation has been noted several times in the literature. Sainsbury (1986) interviewed 31 families and indicated that all parents felt they and their children benefited from the rooming-in, care-by-parent scheme. Parents felt greater confidence about the care and progress of their child and believed the child was happier than if the parents had not been present. It is interesting to note that when the child was very sick on admission, the parents were not allowed to be involved.

Hardgrove (1984) described the care-by-parent program at Moffitt Hospital at the University of California, San Francisco. Describing the written and verbal comments of family members, many parents who previously had to leave their children reported their greatest reward when the child returned home. The parents reported their child was free from distressing upsets that had marked the child's previous return from the hospital. One parent reported staying in order to reassure herself that her child needed her.

James and Wheeler (1969) described the care-by-parent unit at the University of Kentucky Medical Center. A two years' experience with hospitalization of children in the

care-by-parent unit was reported. It was reported that mothers can, with supervision, take complete care of their ill children. The authors believed the plan lessened the emotional trauma of hospitalization for both the child and the parents. By keeping the parent and the child together, the trauma of mother-child separation was felt to be eliminated.

Fore and Holmes (1983) revisited the care-by-parent unit. Originally created for the "nominally ill" child, the unit has expanded to admit children for preoperative teaching and discharge planning. The objectives of the care-by-parent unit have continued to be met. The investigators concluded that by having parents serve as the primary caretaker, positive parent-child interactions were promoted and the emotional trauma caused by separation was eliminated.

Keane, Garralda, and Keen (1986) surveyed 20 percent of parents of children admitted to an acute medical pediatric ward. These parents had opted to live in the hospital while their child was there. Comparing 34 resident parents with 23 from within the visiting group, the children were group-matched for age and sex. The findings showed the resident mothers' decisions for staying usually related to the child's needs. Most parents believed the child would fret if they left, that is, exhibit separation anxiety. Parental

anxiety was scored by the interviewer on a 4-point scale. More of the resident mothers were found to express very high levels of anxiety. Additionally, it was found that resident mothers perceived their child as being more upset when separated from the mother. Resident mothers seemed to exhibit a more acute sense of the needs of their children, although statistics were not used to compare the groups.

Alexander, Powell, Williams, White, and Conlon (1988) examined levels of anxiety in 50 parents who roomed in and 51 parents who did not room in with their hospitalized children. Using the Spielberger State-Trait Anxiety Inventory to measure parental anxiety at two specific times, correlations were found between parental anxiety and maternal education. Maternal education explained 25 percent of the variance in rooming-in parents' state anxiety ( $R^2=.25$ ,  $p=.003$ ). In addition, the Spearman rho was  $-.37$  ( $p=0.4$ ), indicating the higher the education, the lower the mother's anxiety. The Spearman rho between state anxiety and social status was  $r=-.53$  ( $p=.02$ ); that is, higher anxiety was related to lower social status. More important, the study indicated all parents of hospitalized children were anxious, and parents who did not room in were significantly more anxious than parents who did room in.

Parental anxiety is often associated with negative effects on children. Numerous reports in the literature

support the "emotional contagion" hypothesis that parental anxiety may be communicated to the child (Prugh et al., 1953; Wolfer & Visintainer, 1975). Furthermore, anxious parents may not be able to provide the emotional support needed by the child for a positive response to illness and hospitalization (Hardgrove, 1972). Hymovich (1976) described some of the needs and tasks of parents of sick children. She stated that allowing parents to provide direct care to the child was one way of helping parents to cope with their anxiety and guilt feelings about the child's illness. If visiting were restricted, parents would not have the opportunity to provide their children with direct care.

Hardgrove and Rutledge (1975) indicated that the anxiety between parent and child when separated was so great the child was at psychological risk. Loving care offered by a passing parade of strangers did not take the place of the family caretaker. It was the authors' belief that parents should be encouraged to stay during hospitalization. Hansen, Young and Carden (1986) concurred, stating it was beneficial to include as many activities as possible from the child's everyday life, including visits by relatives and friends.

A number of authors have emphasized the role of the intensive care nurse in the promotion of family and patient



interaction. Jillings (1981) formulated nursing interventions, including flexible visiting privileges and assistance with comfort measures, to help the family feel useful. Brandt (1984) pointed out the patient's family may need help in dealing with its sense of powerlessness, fear, anger, and guilt. Braulin, Rook and Sills (1982) pointed out that nursing staff can serve as a role model demonstrating where and how to touch the patient to reduce the feelings of powerlessness and helplessness on the part of the family members.

Lust (1984) reported that limited visiting hours were a problem area for families. In intensive care areas where nurses were more lenient, the family members remained with the critically ill adult patient as long as possible. Subsequent interviews revealed that the presence of the family members was comforting and supportive to the patient as well as to the family.

Gill (1987) stated that it was generally recognized that parent presence and involvement in the hospitalized child's care had benefits for the child, the parents, and the entire family. Unfortunately, nurses did not always support the means of family self-care. Gill (1987) believed that nurses need to examine their attitudes about parent participation. When hospitals encouraged parental participation through unlimited visitation, **family health**

would be supported (Gill, 1987).

There appears to be a paucity of literature on families of patients in the critical care unit, which may reflect an actual lack of staff involvement with families. Gardner and Stewart (1978) believed appropriate staff interactions with families might lead to decreased anxiety and improved patient care. Utilizing case studies, these authors detailed how emphasis on staff/family involvement in critical care areas might benefit the patient and the family as well as the nursing staff. While some nurses saw families as an impediment to patient care, the staff might aid the family and vice versa.

There is little doubt that pediatric hospitals, in recent years, have made many adjustments in routine visiting regulations. Many institutions have liberalized visitation policies in order to promote the emotional health of the child, the parents, and the family. Schuler and Reich (1982) undertook an informal mail survey to explore the current situation of sibling visitation in the United States. The responding pediatric hospitals that allowed siblings to visit reported no obvious change in nosocomial infections, but none conducted a formal study on the risk of infection. Although many health professionals reported subjective impressions that the children received emotional benefits from hospital visitation by siblings, no empirical

data were available. Physicians who responded to the survey perceived that it would be reasonable for hospitals to consider establishing a policy for sibling visitation.

### Summary

The review of the literature has included the discussion of anxiety created in parents by the acute illness of their child and subsequent admission to the PICU. Separation of the child from the family was perceived as a threat to the integrity of the family system. Restricted visitation was documented as one factor that might influence the anxiety level of the parents and the ill child.

Several previous studies have supported parental involvement through increased parental visitation as a method of improving the child's care and decreasing parental anxiety levels. As a result, decreased parental anxiety may help decrease the child's anxiety levels and enable the child to divert energy toward coping with his or her physical illness.

### CHAPTER III

#### METHODOLOGY

##### Research Design

A nonexperimental approach was used in this study because it is the strongest design available when it is not feasible to manipulate the independent variables. While there are potential and actual weaknesses with this design, this particular approach was both practical and feasible for this study.

The dependent variable was state anxiety. The independent variable was the visitation schedule of the PICU. The effect of restricted and unrestricted visitation on one parent of a hospitalized child was studied. The parent's state anxiety was measured by the state portion of the Spielberger State-Trait Anxiety Inventory (STAI). The trait portion of the STAI was administered to the same parent. Both instruments were administered to the parent within 36 hours of the child's admission to the PICU. The trait scores of the STAI served as the covariate.

The setting for the study was two 6-bed pediatric units, an intermediate care unit and an intensive care unit, both with similar functions and both admitting children with a wide range of type and severity of illness. One PICU was located in a 600-bed private hospital in the Midwest region

of the United States. The other PICU was located in a 535-bed private hospital in the Midwest region of the United States. Both PICUs specialized in the care of critically ill children aged 1 day to 18 years.

One PICU used in this study had a restricted visitation policy which limited visits to five minutes every half hour. The other PICU used in this study had an open visitation policy. Anybody could visit the hospitalized child, anytime, day or night. The unrestricted visitation unit had the following limitations:

1. Visitors may be asked to leave during emergencies in the unit.
2. Visitors may be asked to leave at the discretion of the nurse caring for the patient.

### Sample

The convenience sample in this study consisted of one parent of the children 18 years old or less admitted into the two PICUs. A sample of 30 parents was used, 15 parents of children admitted to a restricted visitation pediatric intensive care unit and 15 parents of children admitted to an unrestricted pediatric intermediate care visitation unit.

Selection of the sample was based on the following criteria:

1. Person interviewed was the parent or guardian of the hospitalized child.
2. The parent was able to understand English.
3. The parent was willing to participate in the study.

Data were collected from each group until a sample size of 15 in each group had been reached.

### Survey Instruments

The Spielberger State-Trait Anxiety Inventory (STAI) was used to measure two separate anxiety concepts. State anxiety (A-State) distinguishes anxiety as a transitory emotional state or condition. The essential qualities measured on the A-State scale involve feelings of tension, nervousness, worry, and apprehension. The A-State anxiety scale consists of 20 statements to which the subject responds on a 4-point Likert Scale (a) not at all, (b) somewhat, (c) moderately so, and (d) very much so.

Trait anxiety (A-Trait) refers to fairly stable individual differences in anxiety proneness. The trait scale measures how a person generally feels. The items are not affected by transitory emotional stress. The A-Trait anxiety scale also consists of 20 questions to which the

subject responds (a) almost never, (b) sometimes, (c) often, or (d) almost always.

For each of the two scales, a score was compiled by summing the items. Scores could range from a low of 20 to a high of 80. The higher the numeric score, the higher the level of anxiety.

The State-Trait Anxiety Inventory was developed to provide a reliable, relatively brief self-report measure of both state and trait anxiety. **Form X of the STAI was** originally developed in 1970 and revised into Form Y in 1983 by Spielberger (1983). The original instrument demonstrated a high degree of internal consistency for both scales. Revisions in 1983 were based upon theoretical refinements in Spielberger's concept of anxiety. **In 1983 six items were** replaced in each of the anxiety scales resulting in a more pure measure of anxiety that is more independent of depression (Spielberger, 1983).

Reliability data for the 1983 Form Y was based on 5000 high school students in classroom settings. Test-retest correlations for the students on the trait scale ranged from 0.65 to 0.75. Correlations of the trait scale with the state scale were somewhat low, ranging from 0.16 to 0.62, with a median reliability coefficient of only .33. These differences were expected, for a measure of state anxiety should reflect the unique situational factors that exist at

the time of the testing (Spielberger, 1983).

Studies of Form Y's factor structure have yielded clear-cut distinctions between state and trait anxiety. Almost identical anxiety-present and anxiety-absent factors were found for both sexes. Each factor was defined almost exclusively by state-anxiety or trait-anxiety items (Spielberger, 1983).

Given the transitory nature of anxiety states, measures of internal consistency, such as the alpha coefficient, provide a more meaningful index of the reliability of state anxiety scales than test-retest correlations. Item analysis for both the state and trait scales resulted in high alpha coefficients of 0.92 and 0.90. The alpha coefficients indicated a high degree of internal consistency for the instrument (Spielberger, 1983). In summary, stability, as measured by test-retest coefficients, is relatively high for the STAI trait anxiety scale and low for the state anxiety scale, as would be expected for a measure assessing changes in anxiety resulting from situational stress. The internal consistency for both the state anxiety and trait anxiety scales are quite high as measured by alpha coefficients and item-remainder correlations (Spielberger, 1983).

Concurrent validity of the state and trait scales have been established through other correlations with widely accepted measures of state and trait anxiety. Other



measures include the Zuckerman AACL and the Taylor Manifest Anxiety Scale. Construct and concurrent validity of Form Y have been documented by Spielberger (1983).

More than 2000 studies using the STAI have appeared in the research literature since the STAI Test Manual was published (Spielberger et al., 1970), including studies in medicine, dentistry, education, psychology, and other social sciences. An annotated bibliography of studies with the STAI was published in 1974 (Smith & Lay).

Two other tools were used along with the Spielberger State-Trait Anxiety Inventory. The Parent Demographic Profile included questions on the parent age, gender, and marital status. The profile also included questions on the hospitalized child's age and previous hospitalization experiences (see Appendix A).

The Evaluation of Visiting Hours tool asked if the parent was satisfied with the visiting hours in the PICU. It also contained a section for the parent to make suggestions on any changes in visitation policies he or she would like to see (see Appendix B).

## Procedure

Written consent to conduct this study was obtained from the Committees on the Use of Human Subjects in Research at

both medical centers where the data was collected, and from the Human Subject Research Review Committee at Drake University.

Two research assistants were utilized by the researcher. The research assistants gathered data from the two medical centers. Each research assistant was assigned to only one of the medical centers. The two research assistants were given the same instructions at the same time on how to gather the data, and the researcher answered any questions the research assistants had at that time. The researcher worked with both of the assistants on the approach to the subjects.

The research assistants contacted the PICUs of their assigned medical centers, Monday through Friday, and obtained from the nursing staffs the names of the children hospitalized in the last 36 hours. The research assistants then approached one parent of the hospitalized child between the 12th and 36th hour of the child's hospitalization. The research assistant explained the study and the written consent form. Any questions the parent had were answered at that time. The parent agreeing to participate in the study was then given the trait portion of the STAI, the Parent Demographic Profile, the state portion of the STAI, and the Evaluation of Visiting Hours questionnaire. While the parent was completing the tools, the research assistant left

the waiting area to allow for privacy. When the parent had completed the questionnaires, the parent was instructed to place the tools into the manila envelope provided and to seal the envelope. The research assistant then returned to the area to collect the instruments.

## CHAPTER IV

### ANALYSIS

#### Characteristics of the Subjects

The total number of subjects was 30. Fifteen parents were from the restricted visitation PICU, and 15 were from the unrestricted visitation PICU. Ages of the 30 parents varied from 1 parent in the age group 15-20 to 3 parents in the age group 41-50. Sixteen parents were of the age group 21-30, and 11 were of the age group 31-40. There were no parents younger than 15 or older than 50. The 21-30 year-old age group was the most represented (see Table 1).

Subject age groups were very similar in terms of numbers between the restricted and unrestricted visitation units.

Table 1  
Respondent Age

Age	Unrestricted	Restricted
15-20	1	0
21-30	8	8
31-40	5	6
41-51	1	1
51-60	0	0
61-70	0	0

Twenty-five subjects were female, and 5 were male  
(see Table 2).

Table 2

## Respondent Gender

Gender	Unrestricted	Restricted
--------	--------------	------------

Male	2	3
Female	13	12

Questions concerning marital status were also included in the demographic profile. Twenty-seven of the subjects were married, 2 were divorced, and 1 subject classified himself or herself as "other" (see Table 3).

Table 3

## Respondent Marital Status

Marital Status	Unrestricted	Restricted
----------------	--------------	------------

Married	12	15
Divorced	2	0
Other	1	0

Two-thirds of the children hospitalized in the two PICUs had been hospitalized before, according to the parents (see Table 4).

Table 4

Child's Hospitalization Experience

Child Previously Hospitalized?	Unrestricted	Restricted
Yes	10	10
No	5	5

Of the children who had been hospitalized before, the participants indicated that 11 of the 30 children had been hospitalized in a PICU (see Table 5).

Table 5  
Child's PICU Hospitalization Experience

Child Previously Hospitalized in PICU?	Unrestricted	Restricted
--	--------------	------------

---

Yes	5	6
No	10	10

---

The ages of the children ranged from 11 days to 10 years. Twelve of the children were under the age of 1 year. Nine of the children were aged 1 year to 5 years. Nine of the children were aged 5 years to 10 years (see Table 6 and see Table 7).



Table 6  
Children's Ages  
Unrestricted Visitation Pediatric ICU  
Cumulative Frequency Table

Age	Individual <u>N</u> =15	Cum Freq
0-1 year	6	6
1-5 year	4	10
5-10 year	4	14
10-15 year	1	15
15-18 year	0	15

Table 7  
Children's Ages  
Restricted Visitation PICU  
Cumulative Frequency Table

Age	Individual N=15	Cum Freq
0-1 year	3	3
1-5 year	8	11
5-10 year	2	13
10-15 year	2	15
15-18 year	0	15

Each subject was asked to evaluate whether the visitation hours in the PICU were satisfying to him or her as a parent. All parents responded that the visitation hours were satisfying. Subjects were also given an opportunity to suggest changes to improve the hospitalization for their child or for themselves. All parents responded they were satisfied and felt visiting hours were nonrestrictive. Several stated they felt they

had adequate time to be with their child. Very few differences were found between the responses of the research subjects in the restricted and unrestricted visitation PICUs, although subjects in the unrestricted PICU did mention they were pleased they could come and go as they wished, and were glad their other children could visit. Several parents in the unrestricted PICU wrote they were able to be with their child as much as they wished, and indicated that it was important to them as a parent.

### Statistical Analysis

Data obtained on the Spielberger State-Trait Anxiety Inventory were treated as interval data. Each STAI item was given a weighted score of 1 to 4. A rating of 4 indicated the presence of a high level of anxiety for the anxiety-present items. Total score for each state anxiety and trait anxiety scale could, therefore, vary from a minimum of 20 to a maximum of 80.

An Analysis of Covariance (ANCOVA) was used to test the null hypothesis: When the trait anxiety level is the covariate, there will be no difference between the state anxiety level of the parent whose child has been admitted to the PICU with restricted visiting hours and the state anxiety level of the parent whose child has been admitted to

the PICU with unrestricted visiting hours. The level of significance for this analysis was  $p=.05$  level.

The Analysis of Covariance determined there was no statistical difference in the state anxiety level of the parent whose child had been admitted to the PICU with restricted visiting hours and the parent whose child had been admitted to the PICU with unrestricted visiting hours when trait anxiety was controlled (see Table 8).

Table 8  
Analysis of Covariance

	<u>SS</u>	<u>df</u>	<u>MS</u>	<u>F</u>	<u>Fcv</u>
Covariate	1039.447	27	1039.447	6.823	----
Between	9.184	1	9.184	.060	4.23
Within	4113.369	27	152.347	---	4.23
Total	5162.000	29	-----	---	----

There was significance between the state and trait anxiety levels. However, when trait was controlled for, there was no significance in the state anxiety scores.

A  $t$  test was then used to test for differences in group means. The state anxiety scores for the women were contrasted with the state anxiety scores for the men in the total sample. The  $t$  test enabled the researcher to address the question: Was there a significant difference in the state anxiety scores of females versus males? A  $t$  test was also used to address the question: Was there a difference in the state anxiety scores for those parents under 30 years of age and the state anxiety scores for those parents over 30 years of age? The level of significance for this analysis was  $p=.05$  level.

A  $t$  test for independent samples determined there were no significant differences between state anxiety in females and state anxiety in males (see Table 9).

Table 9  
T Test for Independent Samples

---

	Sample 1	Sample 2	<u>T</u>	<u>DF</u>
<u>N</u>	5	25	---	--
<u>Mean</u>	40.60	37.48	.471	28
<u>SD</u>	14.17	13.41	---	--

---

Probability = .999 (Two tail)

A t test for independent samples also determined there was no significant difference in the state anxiety scores of those aged less than 30 years to those aged greater than 30 years (see Table 10).

Table 10  
T Test for Independent Samples

---

	Sample 1	Sample 2	<u>T</u>	<u>DF</u>
<u>N</u>	17	13	----	--
<u>Mean</u>	36.47	40.00	-.691	24
<u>SD</u>	12.12	15.06	----	--

---

Probability = .999 (Two tail)

A Chi-square of Independence was carried out to determine if there was a difference in the proportion of parents whose state anxiety scores fell above the mean compared to the proportion of parents whose state anxiety scores fell below the mean. These scores were then taken into consideration when looking at previous parental hospitalization experience with the currently hospitalized child. In this instance, the researcher was interested in determining the following: If a child has been previously hospitalized, **is the state anxiety level of the parent less** than the mean? In other words, does previous

hospitalization experience with a child produce lower parental state anxiety scores than what would otherwise be expected? An additional chi-square was used to answer the question: Does previous PICU hospitalization experience with a child produce lower parental state anxiety scores than would otherwise be expected? The level of significance for this analysis was  $p=.05$  level.

A Chi-square of Independence was applied to test the independence of a child's previous hospitalization and the parents' state anxiety scores. While sample sizes were similar, there was no significant difference in the proportions (see Table 11).



Table 11  
Chi-Square Calculation  
Previously Hospitalized?

	Yes	No
State Anxiety		
Above Mean	14	7
Below Mean	6	3

Chi-Square = .179

Degrees of Freedom = 1

Probability = .673

A second chi-square was used to test the independence of a child's previous hospitalization experience in a PICU with the parent's state anxiety score. Sample sizes were similar, but no significant differences were found (see Table 12).

Table 12

## Chi-Square Calculation

Previously Hospitalized in PICU?

Yes

No

State Anxiety

Above Mean

7

14

Below Mean

3

6

Chi-Square = .051

Degrees of Freedom = 1

Probability = .821

## CHAPTER V

### DISCUSSION AND RECOMMENDATIONS

The following hypothesis was tested: when the trait anxiety level is the covariate, is there a difference in the state anxiety level of the parent whose child has been admitted to the PICU with restricted visiting hours and the state anxiety level of the parent whose child has been admitted to the PICU with unrestricted visiting hours? Several questions were asked in relation to the above hypothesis. They are as follows:

1. Was there a significant difference in the state anxiety scores of all females as a group versus all males as a group?
2. Was there a significant difference in the state anxiety scores for those parents under 30 years of age and the state anxiety scores for those parents over 30 years of age?
3. Did previous hospitalization experience with a child produce lower parental state anxiety scores?
4. Did previous PICU hospitalization experience with a child produce lower parental state anxiety scores?

An ANCOVA was used to test the major research hypothesis. Utilizing trait anxiety as the covariate, no

significant difference was found in the state anxiety level of the parent whose child was hospitalized in the restricted visitation PICU versus the state anxiety level of the parent whose child was hospitalized in the unrestricted visitation PICU.

T tests were used to answer questions 1 and 2. The data revealed no significant difference in the state anxiety levels of females as a group in relation to males as a group. The sample sizes of the groups were unequal, however. Five males were surveyed in comparison to 25 females. Further study is indicated with equal numbers of males and females.

There also was no significant difference in the state anxiety scores of the parents over 30 years of age when compared with the state anxiety scores of parents under the age of 30. Two-thirds of the sample had previous hospitalization experience with the child currently hospitalized. Further study is indicated with parents who have no previous hospitalization experience with their child.

A Chi-square of Independence was used to answer questions 3 and 4. There was no significant difference in the proportions of parental state anxiety levels above or below the mean in relation to previous hospitalization experience. No significant difference was found in the

proportions of parents whose child had been previously hospitalized and proportions of parents whose state anxiety levels were located above and below the mean. While these data would indicate that previous hospitalization experience with a child does not have the effect of decreasing the overall anxiety level of the parent, the sample size was small and the number of parents with previous hospitalization experience with their child was relatively large, 2/3 of the sample size. The quality of interaction between a nurse and mother may significantly decrease a parent's anxiety level. Previous experiences with nursing personnel in relation to a hospitalized child may skew the data. Further study is indicated in this area of parental state anxiety and previous hospitalization.

There was no statistical significance in the proportion of parents whose child had been previously hospitalized in a PICU and the frequency in which a parent's anxiety level was located either above the mean or below the mean. As previously stated, the data would indicate experience with a child being hospitalized in a PICU does not have the effect of decreasing the overall anxiety level of the parent. However, the small sample size may have skewed the data, and as a result, the outcome of the entire study. The data cannot be generalized outside the scope of this study. Further study is indicated using parents with a child

previously hospitalized in a PICU.

#### Implications for Further Research

The state anxiety level of the parent whose child was hospitalized in the restricted visitation PICU was not significantly different than the state anxiety level of the parent whose child was hospitalized in the unrestricted visitation PICU. A number of threats to internal validity must be considered when examining this study.

Maturation may have been a threat. Since the researcher chose a time frame for data collection of 12 to 36 hours following the child's admission to the PICU, the parent interviewed at the 12th hour may have been more anxious than the parent interviewed at the 36th hour. It is possible the same parent may have been less anxious after their child had been hospitalized 36 hours in relation to 12 hours. Further study is indicated utilizing a smaller time frame.

Each parent was given the opportunity to answer the questionnaire. Some parents did refuse to participate in the study. There may have been no significant difference in the two groups simply because the parents with the highest state anxiety scores did not participate in the study. Differential selection may have been a threat to internal

validity in a second way. Since parents are consumers of a particular physician or hospital, they self-select themselves to go to either one institution or the other in order to obtain health care service. In this particular case, the health care services chosen was a PICU. This self-selection may have produced some kind of bias or may have altered the results of the study. Further study is indicated utilizing subjects randomly selected to participate in the study.

Instrumentation may have also been a threat to internal validity. Two research assistants administered the questionnaires, resulting in potential for the parental state anxiety levels to be altered as a result of the assistant's approach rather than to the experimental treatment. While an attempt was made to control this threat, the assistant may have failed to follow the exact procedures specified for administering the questionnaire. Even if exact procedures were followed for administering the questionnaire, one cannot ignore individual styles of presence or presentation. Parental state anxiety levels may have been altered as a result of the way the assistant looked rather than any other factor.

There were also a number of threats to the external validity of this study. Population validity is of concern because the size of the two groups was small. A sample size

of 15 for each of the groups may not have been large enough to reveal significant differences between the two groups. Therefore, further study is indicated utilizing a larger sample, preferably one that is randomly selected.

Demographic variables may have interacted with the treatment effects. It is possible that the parent's education level, level of independence or extroversion/introversion may have affected the level of parental anxiety. The number of children in the family, the parent's socioeconomic status, the parent's employment status, and infinite other variables may have been a cause for the null hypothesis to be accepted when it is false (Type II error). Further studies are indicated that would heighten the degree of control.

There is no guarantee the subjects expressed their true subjective feelings at the time they filled out their questionnaires. Although confidentiality was ensured, the parents may still have had fear of some kind of reprisal. As a result, generalizations beyond the scope of this study cannot be made with any reliability. Further study is needed on research subjects in acute care institutions and their level of intimidation. Did subjects feel intimidated when asked to fill out a questionnaire in an acute care setting? This is only one of the many questions that might be answered with further research.



There were also several factors that affected the ecological validity of the study. The Hawthorne effect may have been present. Since parents of children hospitalized in the PICU are not usually asked to fill out a questionnaire between the 12th and 36th hour of admission, this factor alone may have altered the state anxiety level of the parent. The research assistants' being there, paying attention to the parents, giving them something to do by answering the questionnaire, may all have altered the state anxiety level of the parent. Giving the parents something to do by answering the questionnaire may have changed their focus from their child to something else, that of answering the questionnaire. As a result, the external validity of the study is jeopardized because the findings may not generalize to another situation where the research assistants are not present.

A novelty effect may have been present as a threat to external validity. The research assistant may have given different instructions than would normally be received about visitation patterns. Parental state anxiety levels may have been altered because parents knew visitation patterns were being discussed. Parents may have felt their input was being explored and what they had to say was important. Parental satisfaction in relation to visitation may have been higher and parental state anxiety levels lower as a

result. Further study is indicated in this area.

The experimenter effect may have been a threat to external validity. An experimental treatment may or may not have been effective, dependent upon the particular research assistant who administered it. If the restrictive visitation PICU did not adhere closely to their visitation policy, the parental state anxiety scores may have been altered. Further study is indicated with observation of the controlled visitation pattern.

Finally, the interaction of history and treatment effects may have been a threat to external validity. More emphasis has been placed on the general health care industry. People throughout the United States are more familiar with hospitals and their practices. Just a few years ago, no hospital allowed parents to stay overnight with their children. Few hospitals, if any, had unrestricted visitation patterns for parents. The health care industry, in general, has become more concerned about visitation patterns. Since this move to unrestricted visitation patterns for parents of hospitalized children has been made fairly recently, parents may not feel anxious or disenchanted with the current visitation patterns in the PICU.

Along with the threats to external and internal validity, there were several extraneous variables which were

not controlled for. They included such components as severity of illness, length of stay, and kind of illness. One child may have been admitted post surgical where the operation was scheduled, and another may have been victim of a motor vehicle accident, admitted unexpectedly with no time for the parent to prepare for the admission. This factor may have altered the parental state anxiety level. Another extraneous variable not controlled for was the approach to the parents at a given hour. Parental state anxiety may have been very different at hour 36 post admission than at hour 12 post admission. This variable may have skewed the state anxiety data.

Other extraneous variables which were not controlled for included the use of two different institutions with two different environments. Two different sets of physicians were also present because some pediatricians or family practice doctors practice only at one institution. Two different research assistants were also utilized, which may have contributed to error in the data as a result of the extraneous variables.

A number of things were learned as a result of this study. First and foremost, it appeared that parents were satisfied, regardless of visitation schedules. It may have been a result of the small sample size or that parents did not know any other kind of visitation schedule was

available, or even possible. Nonetheless, parents indicated they were satisfied regardless of visitation schedules.

Other positives for nursing must be considered. Staff at both institutions were exposed to some kind of research. While they may not have been directly involved, they were at least exposed to the process.

Although the parents appeared satisfied regardless of visitation schedules, nursing was shown that it is possible to open successfully a PICU to unrestricted visitation patterns. Parents were not any more or less anxious with either visitation schedule.

The health care industry, in general, may take the lead and investigate other areas of critical care when dealing with visitation patterns. While there were not any differences in parental state anxiety levels regardless of the visitation patterns in this sample, this may not be true for adults and significant others when an adult is hospitalized.

This researcher learned a number of things as a result of this research. Parents were wonderful. Regardless of the fact that their child was hospitalized and, quite possibly, critically ill, they were still willing to answer the questionnaires. These parents, with few exceptions, were willing to help the research process.

This researcher found the process of research to be

slow and tedious at times. Most frustrating was the uncontrollable process of data collection. While one might hope a child didn't take ill, this researcher wanted to complete data collection in a relatively short period of time. By the same token, completing the data collection and receiving the test results was exciting. Finding out the answer to a question was a sensational moment. This researcher is now encouraged to take the process a step further and broaden the study while attempting to control for extraneous variables not previously controlled.

This researcher also learned to be a wise consumer of research. Reading multitudes of research articles has a tendency to make one aware of the types of research done, what is available, and what is actually useful.

This researcher also learned goal-directed behavior and the use of time frames. While this study actually began with article collections and library searches in the fall of 1988, it took more than a year to complete, even with diligent effort on the part of the researcher.

This researcher, finally, was consistently reminded what a supportive group of people had been chosen for the committee. They have been such a help along the way. They provided encouragement, perseverance, and strength.

## Recommendations

Continued investigation in this area, utilizing only one pediatric intensive care unit following a restricted visitation pattern, would be appropriate. Data gathered under a restricted visitation policy could be compared with the data gathered under an unrestricted visitation policy within the same unit. As a result, the extraneous variables of different assistants, different nursing personnel, and different environments could be controlled.

A larger, more diverse study controlling some of the major threats to internal validity needs to be done. By controlling threats to internal validity, the observed effects may be the result of the independent variable rather than extraneous variables.

A larger, more diverse study, with an increased sample size including cross-sections of the United States, would make it possible to generalize the results of the study to a larger population. The larger the sample size, the less likely a Type II error might be committed.

Further study should also be conducted on parental anxiety in the PICU. Parents who have never had a child hospitalized in the PICU before should be studied. One of the variables of parental anxiety is fear of the outcome of the admission. Parents' state anxiety may decrease if

parents are familiar with the environment of the PICU or if they have experienced a favorable outcome with their child in previous hospitalizations in a PICU.

A larger, more diverse sample should be used to identify variables that may possibly influence parental state anxiety levels. It would be beneficial to identify characteristics of parental state anxiety that may influence the parents' ability to retain information related to the care of their hospitalized child.

Further research needs to be done to identify parental anxiety in relation to visitation in all areas of the pediatric-hospitalized child, not only in the PICU, but also in the specialized units of bone marrow transplant, the general pediatric ward, the neonatal intensive care unit and heart and kidney transplant units. Finally, studies should be done on the state anxiety levels of hospitalized children. Children hospitalized in the PICU, in some instances, may be able to identify feelings of anxiety, as well as the contributing factors to these feelings. If the characteristics that contribute to feelings of anxiousness in a child can be identified, then appropriate nursing interventions may be utilized to decrease the anxiety levels of the child. Study is needed to address whether unrestricted visitation patterns decrease state anxiety in children.

## Appendix A.

### Parent Demographic Profile

The following questions ask information about you and your child. The data will be used to describe the persons participating in this study. Please place a mark by the answer that describes you or your child.

1. Your Age

15-20 _____	41-50 _____
21-30 _____	51-60 _____
31-40 _____	61-70 _____

2. Your Sex

Male \_\_\_\_\_ Female \_\_\_\_\_

3. Your Marital Status

Married \_\_\_\_\_ Widowed \_\_\_\_\_ Divorced \_\_\_\_\_  
Separated \_\_\_\_\_ Other \_\_\_\_\_

4. Has Your Child Been Hospitalized Before?

Yes \_\_\_\_\_  
No \_\_\_\_\_ When \_\_\_\_\_

5. Has Your Child Been Hospitalized in a PICU Before?

Yes \_\_\_\_\_  
No \_\_\_\_\_

6. Your Child's Age \_\_\_\_\_



Appendix B.  
Evaluation of Visiting Hours

The following questions concern your satisfaction about the visitation policies in the Pediatric ICU. Please answer the following questions:

1. Are the visitation hours in the PICU satisfying to you as a parent?

Yes \_\_\_\_\_

No \_\_\_\_\_

2. If yes, why? \_\_\_\_\_

3. If no, why? \_\_\_\_\_

4. What changes in visitation policies would you suggest to improve this hospitalization for your child or yourself?

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## Appendix C.

## CONSENT FORM

You are being invited to participate in a research study involving one parent of a child hospitalized in the PICU. You have been selected because your child is currently hospitalized in the PICU. You will be one of 30 parents participating in the study. This research study is trying to determine if the type of visitation patterns in the PICU affect the anxiety level of a parent. The information obtained will be used to help hospitals determine a visitation pattern in the PICU that is beneficial to both parents and their children.

You will be asked to complete four forms:

1. A Parent Demographic Profile.
2. The Spielberger State Anxiety Questionnaire
3. The Spielberger Trait Anxiety Questionnaire
4. An Evaluation of Visiting Hours

You are free to discontinue participation at any time. Your decision to participate or not to participate will not alter the amount of time you are allowed to visit your child.

Participation in this study is voluntary. No compensation for participation will be given. Refusing to

participate will involve no penalty or loss of benefits to which you are otherwise entitled. If you do not take part in, or if you withdraw from this study, you will continue to have the same visitation privileges of your child.

The confidentiality of information concerning your participation in this study will be maintained. You will not be asked to identify yourself on the questionnaire; a number will be used to identify all forms completed by you. All four questionnaires will be completed between the 12th and 36th hour of your child's admission to the PICU. All data will be summarized, and no information about any one parent can be identified. The information obtained from this study may be disclosed to other medical personnel and researchers and may be published as research. Any published material will not identify you by name. The information obtained from this study will be used in a thesis to fulfill requirements for a Masters of Science in Nursing degree from Drake University in Des Moines, Iowa.

If you have any questions concerning this study you may feel free to contact Reylon Meeks at (515)247-3330 or my advisor, Dr. Linda Brady, at (515)271-2830.

If you agree to participate in this study, please sign below. Your signature indicates you have read all of the

above, asked questions, received answers concerning areas you did not understand, and willingly give your consent to participate in this program. Upon signing this form, you will receive a copy.

Date \_\_\_\_\_

Parent Signature \_\_\_\_\_

Witness \_\_\_\_\_

Assistant \_\_\_\_\_

You may receive results from this study. If you so desire, please give your name and address to the assistant. All results will be mailed to you after completion of the study.

## Appendix D.

## RAW DATA

## Restricted Visitation Pediatric ICU

Individual	State Score	Trait Score
<u>N</u> =15		
1	25	25
2	32	38
3	44	32
4	50	42
5	32	22
6	40	28
7	24	37
8	39	36
9	28	39
10	51	38
11	43	35
12	41	33
13	33	32
14	60	28
15	29	25

## Appendix E.

## RAW DATA

## Unrestricted Visitation Pediatric ICU

Individual	State Score	Trait Score
<u>N</u> =15		
1	23	26
2	20	32
3	26	32
4	42	38
5	47	27
6	45	49
7	43	47
8	36	26
9	67	66
10	22	21
11	29	33
12	68	24
13	54	42
14	27	34
15	20	27

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